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Notice of Allowability	Application No.	Applicant(s)	
	09/880,793	RAM ET AL.	
	Examiner	Art Unit	
	Kevin Mew	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/30/2007.
2. ☒ The allowed claim(s) is/are 46-48, 50-55, 60, 21-22, 27-29, 61-63 have been renumbered as claims 1-18, respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>10/3/01</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>16</u>. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 1/30/2007 regarding claims 20-22, 24-29, 46-48, 50-55 have been fully considered. Claims 1-19, 23, 30-45, 49, 56-59 have been canceled by applicant. Claims 20, 24-26 have also been canceled, and replaced with claims 60-63, respectively. Claims 21-22, 27-29, 46-48, 50-55, 60-63 are currently pending.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's representative, Ms. Susan Wolffe, on March 15, 2007.

In order to clarify the method claim language of claims 20, 24-26, a new set of claims 60-63 has been proposed to the applicant by the examiner. An agreement has been reached with the applicant to cancel claims 20, 24-26 and replace them with new claims 60-63, proposed by the examiner, respectively.

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Claim 60 reads as:

“A method for communicating with a large number of remote satellite locations, comprising the steps of:

simultaneously communicating in random access mode with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping channels;

determining threshold criteria at a hub site to determine when said first and second set of remote terminal devices are active; and

allocating said channels;

calculating load at said hub site for each of said first and second remote terminal devices and retaining loads in memory; and

correlating said loads at said hub site for each of said first and second remote terminal devices with the last time slot in which a burst was last received from each of said first and second remote terminal devices; and

maintaining said correlated loads in an allocation table.”

Claim 21, line 2, “recited in claim 20” is amended to “recited in claim 60.”

Claim 22, line 2, “recited in claim 20” is amended to “recited in claim 60.”

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Claim 61 reads as:

“A method for communicating with a large number of remote satellite locations, comprising the steps of:

simultaneously communicating in random access mode with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping channels;

preventing collisions between inbound packets from different ones of said first and second remote terminal devices by allocating one of frequency, time slot, and frequency and time slot to said ones of said first and second remote terminal devices that generate the most inbound traffic;

allocating a mini-slot to each of said first and second remote terminal devices when there are more active ones of said first and second remote terminal devices than there are channels; and

wherein said first and second remote terminal devices have a multi-slot counter, said multi-slot counter in each of said first and second remote terminal devices synchronizing with said hub site and each of said first and second remote terminal devices.”

Claim 62 reads as:

“A method for communicating with a large number of remote satellite locations, comprising the steps of:

simultaneously communicating in random access mode with a plurality of a first set of remote terminal devices and communicating with a plurality of second remote terminal devices in a dedicated mode using the same overlapping channels;

determining threshold criteria at a hub site to determine when said first and second set of remote terminal devices are active; and

allocating said channels;

calculating load at said hub site for each of said first and second remote terminal devices and retaining loads in memory, and wherein

said load for each of said first and second remote terminal devices (L_{new}) is calculated according to the following formula:

$$L_{new} = L_{old} (1 - \tau)^n + \tau$$

where τ is a configurable constant, n is the number of time slots since the last time slot on which a packet was received from a remote terminal device, and L_{old} is the previous load value of the remote terminal device.”

Claim 63 reads as:

“A method for communicating with a large number of remote satellite locations,
comprising the steps of:

simultaneously communicating in random access mode with a plurality of a first set of
remote terminal devices and communicating with a plurality of second remote terminal devices
in a dedicated mode using the same overlapping channels;

determining threshold criteria at a hub site to determine when said first and second set of
remote terminal devices are active; and

allocating said channels;

calculating load at said hub site for each of said first and second remote terminal devices
and retaining loads in memory, and wherein

said load (L_{new}) for each of said first and second remote terminal devices is calculated
according to the following formula:

$L_{new} = L_{old} * M * (1 - 1/N)^n + M / N$ where M is a normalizing constant M, N is a time
constant, which is the number of time slots in T seconds (where T is a configuration parameter),
and τ is $1/N$, n is the number of time slots since the last time slot on which a packet was received
from a remote terminal device, and L_{old} is the previous load value of the remote terminal
device.”

In Claim 27, line 2, “recited in claim 20” is amended to “recited in claim 60.”

In Claim 28, line 2, “recited in claim 20” is amended to “recited in claim 60.”

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In addition, claims 46, 50, 51 and 52 have been amended as follows:

In claim 46, line 14-15, "each of said first and second remote terminal device" is amended to "each of said first and second remote terminal devices."

In claim 46, line 16, "a load" is amended to "load."

In claim 46, line 17, "said loads" is amended to "loads."

In claim 46, line 18, "a last time slot" is amended to "the last time slot."

In claim 50, lines 14-15, "each of said first and second remote terminal device" is amended to "each of said first and second remote terminal devices."

In claim 50, line 16, "mini-slot counter" is amended to "multi-slot counter."

In claim 51, lines 14-15, "each of said first and second remote terminal device" is amended to "each of said first and second remote terminal devices."

In claim 51, line 16, "a load" is amended to "load."

In claim 51, line 17, "said loads" is amended to "loads."

In claim 51, lines 17-18, "each of said first and second remote terminal device" is amended to "each of said first and second remote terminal devices."

In claim 51, line 20, "time-slots" is amended to "time slots."

In claim 51, lines 20-21, "a last time-slot" is amended to "the last time slot."

In claim 52, lines 14-15, "each of said first and second remote terminal device" is amended to "each of said first and second remote terminal devices."

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In claim 52, line 16, “a load” is amended to “load.”

In claim 52, line 17, “said loads” is amended to “loads.”

In claim 52, lines 17-18, “each of said first and second remote terminal device” is amended to “each of said first and second remote terminal devices.”

In claim 52, line 21, “time-slots” is amended to “time slots.”

In claim 52, line 22, “time-slots” is amended to “time slots.”

In claim 52, line 22, “a last time-slot” is amended to “the last time slot.”

EXAMINER’S STATEMENT OF REASONS FOR ALLOWANCE

3. The following is an examiner’s statement of reasons for allowance:

The present application relates to providing at a hub station a scheme for allocating channel access resources to both active and inactive remote terminal devices in a satellite communications environment, including the unique method steps of:

“calculating load at said hub site for each of said first and second remote terminal devices and retaining loads in memory; and

correlating said loads at said hub site for each of said first and second remote terminal devices with the last time slot in which a burst was last received from each of said first and second remote terminal devices; and

maintaining said correlated loads in an allocation table.”

The closest prior art, Carneal et al. (USP 6,847,626), provides a satellite communications system where resources are allocated according to whether the access is contention-type, non-

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contention type or reserved. However, Carneal fails to anticipate or render obvious the above quoted limitations. This renders it allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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